DISCUSSION OF THE AMENDMENT

Due to the length of the specification herein, Applicants will cite to the paragraph number of the published patent application (PG Pub) of the present application, i.e., US 2006/0191442, when discussing the application description, both in this section and in the Remarks section, *infra*, rather than to page and line of the specification as filed.

The specification has been amended to delete an internal reference number of the assignee for a German patent application, to correct an error in reference to the wrong Table number, and to insert a definition for film color (p) and film color (o) in Table 2, as supported by, for example, Example 8 at paragraph [0121].

Claim 1 has been amended by inserting --at least-- before "5%" and --by weight-- after "5%", as supported in the specification at paragraph [0035]; by rewording the process, including deleting the term "colored polymer system," to claim --forming a film from an aqueous emulsion of a polymer with core/shell structure, and then removing water from the aqueous film, thereby forming a polymeric film, wherein the polymeric film produces a visual effect upon reflection of electromagnetic radiation--, as supported in the specification at paragraphs [0081]-[0086] combined; and by inserting that the shell monomers are --filmable--, and the --polymeric film comprises a matrix and discrete polymer particles distributed in the matrix, wherein the shells form the matrix and the cores form the discrete polymer particles, as supported in the specification at paragraph [0022]. Other amendments are clerical in nature.

Claims 22-24 have been amended by replacing "composition" with --substrate--.

Other amendments have been made to be consistent with the above-discussed amendment to Claim 1, and to provide antecedent basis, where applicable.

New Claims 25-32 have been added. Claim 25 is supported by Claim 17. Claims 26-28 are supported in the specification at paragraph [0046]. Claim 29 is supported in the

specification at paragraph [0030]. Claim 30 is supported in the specification at paragraph [0036]. Claim 31 is supported in the specification at paragraph [0037]. Claim 32 is supported in the specification at paragraph [0048].

No new matter is believed to have been added by the above amendment. Claims 1-18 and 20-32 are now pending in the application.

REMARKS

The rejection of Claims 1-18 and 20-24 under 35 U.S.C. § 102(b) as anticipated by US 5,273,824 (Hoshino et al), US 2002/0072560 (Bardman et al) or US 5,229,209 (Gharapetian et al), is respectfully traversed.

The present invention is drawn to, in effect, a novel colored polymer system. Various prior art systems are listed in the specification at paragraph [0024], such as DE-19820302 and DE-19834194, which documents have been made of record herein in an IDS. DE-19820302 has a US equivalent, i.e., US 6,337,131 (Rupaner et al), which can be easily consulted as background art herein. The present invention distinguishes over this prior art, at least by virtue of the presently-recited second or transition stage polymerization, i.e., between the first stage of polymerizing the core monomers and the third stage of polymerizing the shell monomers, as described in the specification at paragraph [0025].

Hoshino et al discloses a cored multi-shell emulsion particle which forms layers of different refractive indexes, said particle having a diameter D of from 0.1 to 5.0μ and including therein a core particle and a void layer which exists in the exterior of said core particle, the ratio of the diameter Φ of the core particle to D and the ratio of the diameter d of the void layer to D being in the range, respectively:

$\Phi/D=0.1\text{-}0.6$

$d/D=0.2\text{-}0.8$

wherein $d > \Phi$ (column 3, line 54ff), which emulsion particle can be accomplished by providing the above cored multi-shell emulsion particle obtained by the steps of conducting emulsion polymerization of a vinyl monomer (a) to obtain a polymer (A) as a core particle, adding thereto a vinyl monomer (b) which yields a polymer capable of swelling with an alkaline material, conducting emulsion polymerization to form an exterior layer composed of a polymer (B), followed by adding a vinyl monomer (c), conducting emulsion polymerization

to form the polymer (C), treating a resulting multi-layer-structured emulsion particle with an alkaline material to swell the polymer (B), and drying the swelled particle thus obtained, or can be accomplished by providing the above cored multi-shell emulsion particle obtained by further adding a vinyl monomer (d) after swelling the above polymer (B), conducting emulsion polymerization to form a polymer (D) as an exterior layer of the polymer (C), and drying the emulsion particle thus obtained (column 4, lines 1-20).

Bardman et al discloses a process for forming an aqueous multimodal polymeric dispersion including at least two emulsion polymers of differing particle diameter, at least one of which emulsion polymers includes a core and at least two shells, the first shell having a glass transition temperature greater than 50°C and the outermost shell having a Tg from 10°C to -50°C and contains at least one void [0001]. In a first embodiment, Bardman et al's process includes (1) forming emulsion-polymerized multistaged first polymer particles having (a) a hydrophilic core polymer formed from 5% to 100% by weight, based on the total weight of the core polymer, of a hydrophilic monoethylenically unsaturated monomer and from 0% to 95% by weight, based on the total weight of the core polymer, of at least one nonionic monoethylenically unsaturated monomer; (b) a first shell polymer formed from 90% to 99.9% by weight, based on the total weight of the first shell polymer, of at least one nonionic monoethylenically unsaturated monomer and from 0.1% to 10% by weight, based on the total weight of the first shell polymer, of an acid functional monoethylenically unsaturated monomer, wherein the first shell polymer fully encapsulates the core polymer, wherein the ratio of the weight of the core polymer to the weight of the first shell polymer is from 1:2 to 1:100, and wherein the first shell polymer has a glass transition temperature greater than 50°C and (c) a second shell polymer formed from 93% to 99.9% by weight, based on the total weight of the second shell polymer, of at least one nonionic monoethylenically unsaturated monomer and from 0.1% to 7% by weight, based on the total

weight of the second shell polymer, of an acid functional monoethylenically unsaturated monomer, wherein the second shell polymer is formed in the presence of the first shell polymer, and wherein the second shell polymer has a glass transition temperature from 10°C to -50°C, and wherein the second shell polymer is at least 10% by weight of the total weight of the first shell polymer and the second shell polymer; (2) forming a second emulsion polymer in the presence of the first emulsion polymer by (a) adding, after the core polymer has been formed, an amount of surfactant sufficient to generate new particles or an emulsion-polymerized seed latex having a particle diameter less than 200 nanometers to the polymerization; (b) then adding any remainder of the first shell polymer monomer mixture and then any remainder of the second shell polymer monomer mixture and from 0 to 90% by weight, based on the weight of the solids of the aqueous polymeric dispersion, of at least one ethylenically unsaturated monomer; (3) effecting polymerization of at least 95% of all added monomer by weight based on the weight of the solids of the aqueous polymeric dispersion; and (4) neutralizing the aqueous dispersion formed with a base so as to swell the core and form particles which, when dry, contain a void [0007]. In a second embodiment, an emulsion polymer is not formed in the presence of the other emulsion polymer [0008].

Gharapetian et al discloses a process for the manufacture of vesiculated core-shell particles comprising forming an aqueous emulsion of at least one ethylenically unsaturated monomer with acid functionality, polymerising said unsaturated monomer to form core particles of polymer; forming an aqueous dispersion of said core particles and a monomer mixture of a nonionic monoethylenically unsaturated aromatic monomer and a copolymerisable polar monomer in an amount of at least 15 per cent by weight of the total weight of the monomer mixture and said copolymerisable polar monomer having a solubility in water at 20°C of at least 1 per cent by weight; polymerising said monomer mixture to form a first shell on said core particles; adding to an aqueous dispersion of said core particles

having a first shell a further nonionic monomer which has a solubility in water at 20°C of less than 1 per cent by weight and polymerising said further monomer to form a second shell on the said particles, and mixing the core/shell particles so obtained with a non-volatile fixed or permanent base to swell the cores and generate therein one or more vesicles (column 1, lines 44-68).

All of the above-applied prior art can be characterized as disclosing processes for making core/multi-shell particles having at least a void layer therein. However, none of Hoshino et al, Bardman et al or Gharapetian et al disclose or suggest the particular relationship of the monomers used to make their respective core and shell layer(s), or the production of an aqueous film which, when water is removed, produces a polymeric film with a visual effect upon reflection of electromagnetic radiation, or which polymeric film comprises a matrix (formed from the shell) and discrete polymer particles (formed from the core) distributed in the matrix, all as required by the present claims.

For all the above reasons, it is respectfully requested that the rejection be withdrawn.

The rejection of Claims 1-18 and 20-24 under 35 U.S.C. § 112, second paragraph, is respectfully traversed. Indeed, the rejection would now appear to be moot in view of the above-discussed amendment. Accordingly, it is respectfully requested that this rejection be withdrawn.

The rejection of Claims 1-16, 18 and 20-24 under 35 U.S.C. § 101, is respectfully traversed. Indeed, the rejection would now appear to be moot in view of the above-discussed amendment. Accordingly, it is respectfully requested that this rejection be withdrawn.

All of the presently-pending claims in this application are now believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Respectfully submitted,

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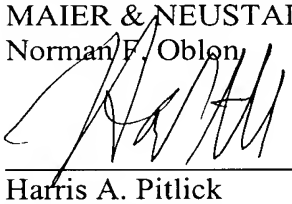

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